

IN THE CLAIMS:

- 1 1. (CANCELLED)
- 1 2. (CANCELLED)
- 1 3. (CANCELLED)
- 1 4. (CANCELLED)
- 1 5. (CANCELLED)
- 1 6. (CURRENTLY AMENDED) A method of claiming ownership of a disk by a network device in a network storage system comprising the steps of:
 - 3 writing ownership information to a predetermined area of the disk; and
 - 4 setting a small computer system interface ~~level 3~~-persistent reservation tag to a
 - 5 state of network device ownership.
- 1 7. (ORIGINAL) The method of claim 6 wherein the ownership information further comprises a serial number of a network device.

1 8. (ORIGINAL) The method of claim 6, wherein the network device comprises a file
2 server.

1 9. (CURRENTLY AMENDED) A network storage system comprising:
2 a plurality of network devices;
3 one or more switches, each network device connected to at least one of the one or
4 more switch; and
5 a plurality of disks having a first ownership attribute written to a predetermined
6 area of the disk and a second ownership attribute in the form of a small computer system
7 interface persistent reservation tag, each disk connected to at least one of the plurality of
8 switches.

1 10. (CANCELLED)

1 11. (CURRENTLY AMENDED) The network storage system of claim 9, wherein the
2 small computer system interface persistent reservation tag is -second ownership attribute
3 further comprises a small computer system interface level 3 persistent reservation tag.

1 12. (CURRENTLY AMENDED) The networked storage system of claim ~~11~~9, wherein
2 ~~each disk that is owned by the network device has the small computer system interface~~
3 ~~level-3 persistent reservation tag is set such that only the network device may write to the~~
4 ~~disk.~~

1 13. (CURRENTLY AMENDED) The network storage system of claim ~~10_9~~, wherein the
2 first ownership information attribute further comprises of a serial number of the network
3 device that owns that particular disk.

1 14. (CURRENTLY AMENDED) The network storage system of claim ~~10_9~~, wherein
2 each of the plurality of file servers can read data from each of the plurality of disks.

1 15. (CURRENTLY AMENDED) The network storage system of claim ~~10_9~~, wherein
2 only a network device that owns one of the plurality of disks can write data to the one
3 disk.

1 16. (ORIGINAL) The network storage system of claim 9, wherein the network devices
2 comprise file servers.

1 17. (CURRENTLY AMENDED) A network storage system comprising:
2 one or more switches;
3 a plurality of disks; and
4 means for writing ownership information to a predetermined area of a disk; and
5 means for setting a small computer system interface level 3 persistent reservation
6 tag of a disk.
7 ~~a plurality of network devices, each of the network devices including means for~~
8 ~~claiming ownership of one of the plurality of disks in the network storage system.~~

1 18. (CANCELLED)

1 19. (ORIGINAL) The network storage system of claim 17, wherein the network devices
2 comprise file servers.

1 20. (CURRENTLY AMENDED) A network storage system comprising:
2 one or more switches interconnected to form a switching fabric;
3 a plurality of disks, each of the disks connected to at least one of the switches,
4 each disk storing a first ownership attribute to a predetermined area of a disk and
5 each disk associated with a second ownership attribute in the form of a small
6 computer system interface persistent reservation; and
7 one or more network devices, interconnected with the switching fabric, each of
8 the network devices being adapted to own a predetermined set of disks of the plurality of
9 disks through use of the first and second ownership attributes.

1 21. (CANCELLED)

1 22. (CANCELLED)

1 23. (CURRENTLY AMENDED) The network storage system of claim 22_20, wherein
2 the ownership information-first ownership attribute further comprises a serial number of
3 one of the one or more network devices.

1 24. (CURRENTLY AMENDED) The network storage system of claim 20, wherein the
2 small computer system interface persistent reservation second ownership information is a
3 small computer system interface level 3 persistent reservation.

1 25. (ORIGINAL) The network storage system of claim 20, wherein each of the network
2 devices further comprises a disk ownership table, the disk ownership table containing
3 ownership data for each of the disks.

1 26. (ORIGINAL) The network storage system of claim 25, wherein the ownership table
2 further comprises a world wide name for each of the disks, the world wide name being
3 used for identification of each of the disks.

1 27. (CURRENTLY AMENDED) A computer-readable medium, including program in-
2 structions executing on network device, for performing the steps of:
3 writing ownership information to a predetermined area of a disk; and
4 setting a small computer system interface ~~level 3~~-persistent reservation tag to a
5 state of network device ownership.

1 28. (PREVIOUSLY PRESENTED) A method for a network device to manage owner-
2 ship of one or more storage devices in a network storage system, comprising the steps of:
3 reading ownership information from a predetermined area of each storage device;
4 in response to reading the ownership information, creating an ownership table that
5 identifies the one or more storage devices owned by the network device;
6 reading a small computer system interface (SCSI) level 3 persistent reservation
7 tag from each storage device;

8 comparing the SCSI level 3 persistent reservation tag to the ownership information of the same storage device and, if there is not a match, changing the SCSI level 3
9 persistent reservation tag to match the ownership information; and
10 configuring the one or more storage devices identified in the ownership table into
11 at least one volume for use by the network device.

1 29. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:
2 setting ownership information at the predetermined area of each storage device.

1 30. (PREVIOUSLY PRESENTED) The method of claim 28 wherein the step of configuring further comprises:
2 organizing the one or more storage devices into at least one Redundant Array of
3 Independent Disks (RAID) group.

1 31. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:
2 wherein the predetermined area of the one or more storage devices is sector zero
3 of the one or more storage devices.

1 32. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:
2 wherein the ownership information is a serial number of the network device that
3 owns that particular storage device.

1 33. (PREVIOUSLY PRESENTED) The method of claim 28 further comprising:
2 wherein the ownership table includes a world wide name for each of the storage
3 devices, the world wide name being used to identify each of the storage devices.

1 34. (PREVIOUSLY PRESENTED) A network device for managing ownership of one
2 or more storage devices in a network storage system, comprising the steps of:
3 means for reading ownership information from a predetermined area of each stor-
4 age device;
5 in response to reading the ownership information, means for creating an owner-
6 ship table that identifies the one or more storage devices owned by the network device;
7 means for reading a small computer system interface (SCSI) level 3 persistent res-
8 ervation tag from each storage device;
9 means for comparing the SCSI level 3 persistent reservation tag to the ownership
10 information of the same storage device and, if there is not a match, changing the SCSI
11 level 3 persistent reservation tag to match the ownership information; and
12 means for configuring the one or more storage devices identified in the ownership
13 table into at least one volume for use by the network device.

1 35. (PREVIOUSLY PRESENTED) A computer readable medium containing executable
2 program instructions for managing ownership of one or more storage devices in a net-
3 work storage system, the executable program instructions comprising program instruc-
4 tions for:
5 reading ownership information from a predetermined area of each storage device;
6 in response to reading the ownership information, creating an ownership table that
7 identifies the one or more storage devices owned by the network device;

8 reading a small computer system interface (SCSI) level 3 persistent reservation
9 tag from each storage device;
10 comparing the SCSI level 3 persistent reservation tag to the ownership informa-
11 tion of the same storage device and, if there is not a match, changing the SCSI level 3
12 persistent reservation tag to match the ownership information; and
13 configuring the one or more storage devices identified in the ownership table into
14 at least one volume for use by the network device.

1 36. (PREVIOUSLY PRESENTED) A network storage system, comprising:
2 one or more storage devices, each storage device having a predetermined area for
3 storing ownership information and each storage device having a small computer system
4 interface (SCSI) level 3 persistent reservation tag;
5 at least one network device having an ownership table constructed based upon
6 the ownership information from each storage device;
7 the at least one network device having an ownership layer for comparing the SCSI
8 level 3 persistent reservation tag to the ownership information of the same storage device
9 and, if there is not a match, changing the SCSI level 3 persistent reservation tag to match
10 the ownership information; and
11 the at least one network device having a disk storage layer for configuring the one
12 or more storage devices identified in the ownership table into at least one volume for use
13 by the network device.

1 37. (PREVIOUSLY PRESENTED) The network storage system of claim 36 further
2 comprising:
3 the ownership layer adapted to set ownership information at the predetermined
4 area of each storage device.

- 1 38. (PREVIOUSLY PRESENTED) The network storage system of claim 36 further
- 2 comprising:
 - 3 the disk storage layer organizing the one or more storage devices into at least one
 - 4 Redundant Array of Independent Disks (RAID) group.

- 1 39. (PREVIOUSLY PRESENTED) The network storage system of claim 36 further
- 2 comprising:
 - 3 wherein the predetermined area of the one or more storage devices is sector zero
 - 4 of the one or more storage devices.

- 1 40. (PREVIOUSLY PRESENTED) The network storage system of claim 36 further
- 2 comprising:
 - 3 wherein the ownership information is a serial number of the network device that
 - 4 owns that particular storage device.

- 1 41. (PREVIOUSLY PRESENTED) The network storage system of claim 36 further
- 2 comprising:
 - 3 wherein the ownership table includes a world wide name for each of the storage
 - 4 devices, the world wide name being used to identify each of the storage devices.

- 1 42. (NEW) The method of claim 6 wherein the small computer system interface persistent reservation tag and the ownership information at the predetermined area of the disk
- 2 indicate ownership by the same network device.

1 43. (NEW) The method of claim 6 wherein the small computer system interface persis-
2 tent reservation tag is a small computer system interface level 3 persistent reservation tag.

1 44. (NEW) A method for a network device to manage ownership of one or more storage
2 devices in a network storage system, comprising the steps of:

1 reading ownership information from a predetermined area of each storage device;
2 accessing a small computer system interface (SCSI) persistent reservation tag as-
3 sociate with each storage device;
4 comparing the SCSI persistent reservation tag to the ownership information of the
5 same storage device and, if there is not a match, changing the SCSI persistent reservation
6 tag to match the ownership information; and
7 configuring the one or more storage devices for use by the network device.

1 45. (NEW) The method of claim 44 wherein the small computer system interface (SCSI)
2 persistent reservation tag is a small computer system interface level 3 (SCSI-3) persistent
3 reservation tag.

1 46. (NEW) The method of claim 44 further comprising:

1 in response to reading the ownership information, creating an ownership table on
2 the network device that identifies the one or more storage devices owned by the network
3 device; and
4 using the ownership table to configure the one or more storage devices into at
5 least one volume.

1 47. (NEW) The method of claim 44 further comprising:

2 setting ownership information at the predetermined area of each storage device.

- 1 48. (NEW) The method of claim 44 further comprising:
 - 2 wherein the predetermined area of the one or more storage devices is sector zero
 - 3 of the one or more storage devices.

- 1 49. (NEW) A network storage system, comprising:
 - 2 means for reading ownership information from a predetermined area of each stor-
 - 3 age device;
 - 4 means for accessing a small computer system interface (SCSI) persistent reserva-
 - 5 tion tag associate with each storage device;
 - 6 means for comparing the SCSI persistent reservation tag to the ownership infor-
 - 7 mation of the same storage device and, if there is not a match, changing the SCSI persis-
 - 8 tent reservation tag to match the ownership information; and
 - 9 means for configuring the one or more storage devices for use by the network de-
 - 10 vice.

- 1 50. (NEW) A computer readable medium containing executable program instructions for
2 manage ownership of one or more storage devices, the executable program instructions
3 comprising program instructions for:
 - 4 reading ownership information from a predetermined area of each storage device;
 - 5 accessing a small computer system interface (SCSI) persistent reservation tag as-
 - 6 sociate with each storage device;
 - 7 comparing the SCSI persistent reservation tag to the ownership information of the
 - 8 same storage device and, if there is not a match, changing the SCSI persistent reservation
 - 9 tag to match the ownership information; and
 - 10 configuring the one or more storage devices for use by the network device.